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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,420	08/25/2003	William Paul Cook	2002-0848.02/4670-178	2788

7590 12/15/2004
LEXMARK INTERNATIONAL, INC.
ATT: JOHN J. McARDLE, JR.
740 WEST NEW CIRCLE ROAD
LEXINGTON, KY 40550

EXAMINER

ROYER, WILLIAM J

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/647,420	Applicant(s) COOK ET AL.	
	Examiner William J. Royer	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-50 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08252003</u> . | 6) <input type="checkbox"/> Other: ____. |

This application is in condition for allowance except for the following formal matters:

Drawings

The drawings are objected to because of the following informalities:

In Figure 2, delete the label --- ETC. ---

In Figure 3, move the label --- CLUTCH --- to the inside of the box identified by reference numeral "34".

In Figure 3, change the label "IMAGING PROCESSOR" to --- IMAGE PROCESSOR --- in the box identified by reference numeral "40".

In Figure 3, change the label "PWM SIGNAL GEN." to --- SPEED CONTROLLER --- in the box identified by reference numeral "42".

In Figure 3, change the label "STORED VALUE(S)" to --- MEMORY DEVICE --- in the box identified by reference numeral "48".

In Figure 3, insert reference numeral "14" and a corresponding lead line with an arrowhead to identify the "waste toner system" described in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because of the following informalities:

In Figures 4 and 5, reference numeral "33" is shown, however, reference numeral "33" does not appear to be identified in the specification.

In Figure 7, reference numeral "82" is shown, however, reference numeral "82" does not appear to be identified in the specification.

In Figure 8, reference numerals "108" and "110" are shown, however, neither reference numeral appears to be identified in the specification.

In paragraph [0003], line 3, after "with" insert --- the ---.

In paragraph [0012], lines 3 and 4, change "etc." to --- and the like ---.

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In paragraph [0012], line 4, before "apparatus" insert --- image forming ---.

In paragraph [0012], line 6, change "apparatus" to --- image forming apparatus
10 ---.

In paragraph [0013], line 3, before "apparatus" insert --- image forming ---.

In paragraph [0015], line 1, before "apparatus" insert --- image forming ---.

In paragraph [0015], lines 2, 3, 5 and 6, before "container" insert -- waste toner--.

In paragraph [0016], lines 2, 3 and 5, before "container" insert --- waste toner ---.

In paragraph [0017], line 1, before "container" insert --- waste toner ---.

In paragraph [0017], line 4, change "waste container" to --- waste toner container
28 ---.

In paragraph [0017], line 5, before "apparatus" insert --- image forming ---.

In paragraph [0018], lines 2-4, before "container" insert -- waste toner ---.

In paragraph [0018], line 4, before "apparatus" insert --- image forming ---.

In paragraph [0019], line 7, before "drive" insert --- first ---.

In paragraph [0019], line 8, change "as" to --- a ---.

In paragraph [0020], line 2, what is "it"?

In paragraph [0022], line 7, after "by" insert --- a ---.

In paragraph [0023], line 2, after "comprising" insert --- a ---.

In paragraph [0024], line 2, change "drive apparatus 24" to --- first drive
apparatus 30 ---.

In paragraph [0024], line 3, after "motor" insert --- 22 ---.

In paragraph [0025], line 4, change "drive apparatus 24" to --- first drive apparatus 30 ---.

In paragraph [0025], line 5, change "engage second drive apparatus" to --- engage second drive apparatus 36 ---.

In paragraph [0025], line 10, change "10" to --- 12 ---.

In paragraph [0026], lines 1 and 5, before "container" insert --- waste toner ---.

In paragraph [0027], line 3, after "memory" insert --- device ---.

In paragraph [0027], line 4, change "etc" to --- and the like ---.

In paragraph [0027], line 6, before "container" insert --- waste toner ---.

In paragraph [0028], lines 2 and 4, change "imaging" to --- image ---.

In paragraph [0028], line 6, delete --- etc., ---.

In paragraph [0029], lines 1, 2 and 4, change "imaging" to --- image ---.

In paragraph [0030], line 7, after "system" insert --- 12 ---.

In paragraph [0031], line 2, before "container" insert --- waste toner ---.

In paragraph [0031], line 3, delete --- 22 ---.

In paragraph [0032], lines 4, 6 and 8, before "container" insert --- waste toner ---.

In paragraph [0034], line 4, before "rake" insert --- toner ---.

In paragraph [0034], line 6, before "container" insert --- waste toner ---.

In paragraph [0035], line 2, before "rake" insert --- toner ---.

In paragraph [0036], line 5, delete --- control ---.

In paragraph [0037], line 6, before "rake" insert --- toner ---.

In paragraph [0038], lines 1, 3 and 4, before "rake" insert --- toner ---.

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In paragraph [0038], line 5, change "toner inlet area" to --- inlet 60 ---.

In paragraph [0038], line 6, before "container" insert --- waste toner ---.

In paragraph [0039], line 2, before "rake" insert --- toner ---.

In paragraph [0039], line 7, change "imaging" to --- image ---.

In paragraph [0039], line 10, delete --- etc., ---.

In paragraph [0039], line 10, before "container" insert --- waste toner ---.

In paragraph [0040], lines 1, 5 and 7, before "container" insert --- waste toner ---.

In paragraph [0040], line 3, before "rake" insert --- toner ---.

In paragraph [0041], line 6, before "container" insert --- waste toner ---.

In paragraph [0043], line 1, before "rake" insert --- toner ---.

In paragraph [0045], line 1, change "provide" to --- provides ---.

In paragraph [0046], line 2, after "motor" insert --- 22 ---.

In paragraph [0047], line 2, before "pinion" insert --- drive ---.

In paragraph [0047], lines 3-5, change "gear 72" to --- first gear 72 ---.

In paragraph [0047], line 3, delete --- clutch ---.

In paragraph [0047], lines 5 and 6, change "gear 74" to --- second gear 74 ---.

In paragraph [0047], line 6, after "drives" insert --- a drive ---.

In paragraph [0047], line 7, change "Gear" to --- Drive gear ---.

In paragraph [0047], line 8, delete --- 22 ---.

In paragraph [0048], lines 3-5, 8 and 10, before "container" insert - waste toner -.

In paragraph [0049], line 1, delete --- 22 ---.

In paragraph [0049], line 2, before "container" insert --- waste toner ---.

In paragraph [0050], line 3, before "container" insert --- waste toner ---.

In the abstract, lines 2 and 3, before "container" insert --- waste toner ---.

Appropriate correction is required.

Claim Objections

Claims 1 and 50 are objected to because of the following informalities:

Claim 1, line 7, change "toner;" to --- toner; and ---.

Claim 1, line 9, change "toner;" to --- toner. ---.

Claim 50, line 2, before "motor" insert --- shared ---.

Appropriate correction is required.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Allowable Subject Matter

Claims 1-7 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing an image forming apparatus with a waste toner system in which a toner distributing member in a waste toner container is driven

by a motor shared by an image forming system configured to perform imaging operations and the waste toner system.

Claims 8-19 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing a waste toner system for use in an image forming apparatus including a motor control circuit configured to maintain a motor at a desired motor speed over a range of motor loads and a logic circuit configured to detect accumulation of waste toner within a waste toner container by monitoring the motor control circuit.

Claims 20-24 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing a waste toner system for use in an image forming apparatus including a motor control circuit to vary a speed control signal as needed to maintain a desired motor speed and a logic circuit to detect excess accumulation of waste toner within a waste toner container by comparing one or more values of the speed control signal while the motor is driving a toner distributing member with one or more reference values corresponding to a nominal accumulation condition.

Claims 25-31 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing a waste toner system for use in an image forming apparatus in which a shared motor is configured to drive an image forming

process member of the image forming apparatus and drive a toner distributing member that is used to distribute waste toner in a waste toner container.

Claims 32-44 are allowable over the prior art of record because the prior art of record fails to teach or suggest a method of operation in an image forming apparatus that includes a waste toner system, the method using a speed-controlled motor to drive a toner distributing member that distributes waste toner collected in a waste toner container and detecting accumulation of waste toner based on monitoring a speed control signal that varies as needed to maintain a desired motor speed while driving the toner distributing member.

Claims 45-50 are allowable over the prior art of record because the prior art of record fails to teach or suggest a method of operation in an image forming apparatus that includes a waste toner system, the method including using a shared motor to drive both an image forming process member using in image forming operations and a toner distributing member used to distribute accumulated waste toner collected in a waste toner container.

Relevant Prior Art

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ogura et al disclose an apparatus that includes a generator for generating an electric signal corresponding to a change in a load acting on a recovering element in response to the amount of a developer and a monitor for monitoring the amount of developer in accordance with the electrical signal.

Information Disclosure Statement

The U.S. patent documents cited in the IDS filed August 25, 2003 have not been considered because FORM PTO-1449 was not filled out correctly. In particular, the complete patent number, date which includes at least the month and year of the patent and the name of the inventor(s) should be filled in on FORM PTO-1449. Applicant is encouraged to resubmit their IDS with a properly completed FORM PTO-1449 if they wish the U.S. patent documents to be considered by the examiner.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Royer whose telephone number is (571) 272-2140. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley can be reached on (571) 272-2136. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "William J. Royer". The signature is written in a cursive, flowing style.

William J. Royer
Primary Examiner
Art Unit 2852

wjr
December 10, 2004